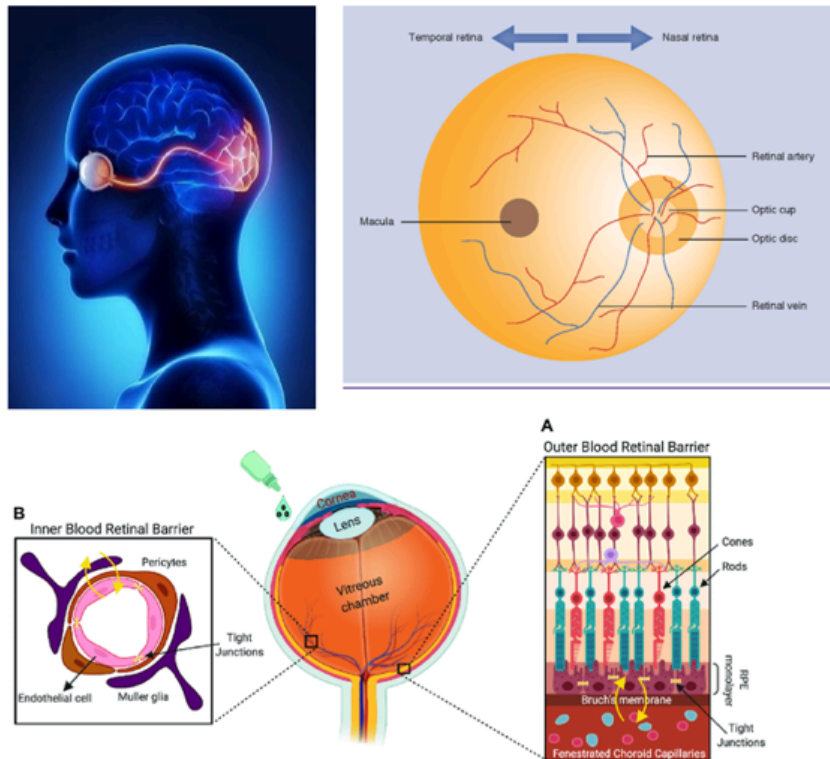


RETINA -> BLOOD VESSEL -> BRAIN BARRIER



RETINAL PATHOLOGICAL CHANGES & ALZHEIMER'S

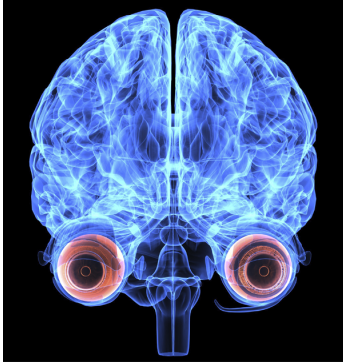
Changes in the brain that lead to Alzheimer's disease (neurodegenerative condition) are thought to start decades before cognitive symptoms emerge.

Alzheimer's disease pathologies were discovered in the accessible neurosensory retina demonstrating quantitative relationship with brain pathology and cognition with reliable retinal biomarkers for noninvasive retinal screening.

Researchers have discovered, and at a pivotal time too, a promising new way to spot the earliest signs of Alzheimer's disease — and **it lies deep within the eyes**. The **retina** not only links to the visual processing and cognitive centers of the brain, but it is also an extension of the brain sharing embryological origins, blood supply and nerve tissue, a huge potential as an area for biomarker testing.

A new study in the Journal Acta Neuropathologica, official journal of Nordic and Dutch Ophthalmological Societies, involving retinal samples from 86 human donors gathered over 14 years, links **cognitive impairment with retinal changes** that can occur in the earliest stages of disease progression.





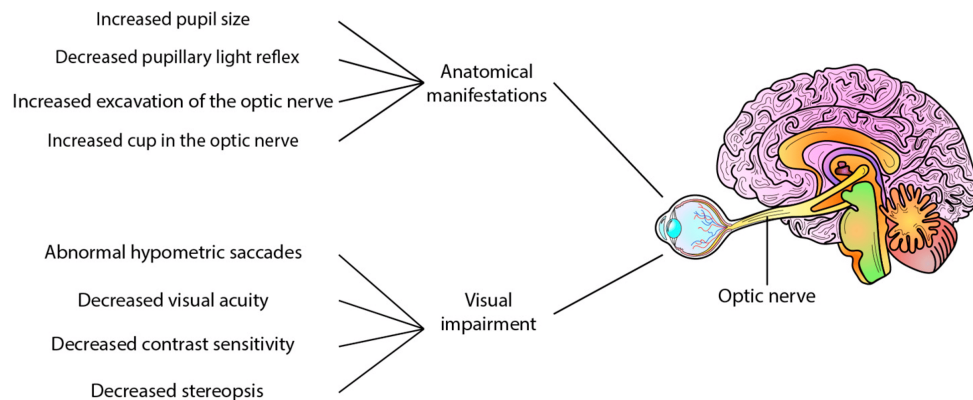
The findings suggest that retinal intracellular oligomer accumulation can be an early biomarker of Alzheimer's / dementia. Oligomerization is observed due to the high protein concentration, as well as other factors like pH. Oligomers are transient soluble amyloids that are toxic and accumulate early prior to insoluble plaque formation triggering synapse failure causing cognitive impairment in Alzheimer's disease.

Resident immune cells of the central nervous system (CNS) play a key role in maintaining the normal function of the retina and brain connection. During early development, these immune cells migrate into the retina, transform into a highly ramified phenotype, and scan their environment constantly. A 'phenotype' is an observable change that occurs in an individual due to genetic and epigenetic (environmental) factors.

Other diseases affecting the blood vessels in the retina such as **diabetic retinopathy and age-related macular degeneration** are characterized by similar degradation of the **blood-retina barrier**.

The takeaway from this is caring for the eyes, retina, and optic nerves plays a huge role in determining our cognitive abilities in later years. Retinal imaging screening for Alzheimer is less expensive and less invasive than current neuroimaging techniques.

Note, we are definitely not excluding the ears, nose, and teeth from this picture.





RETINA->BRAIN->BLOOD BARRIER
Resonant cellular quantum frequencies

Cerebral DT
Memory, Focus & Clarity
Cleans Blood Plasma
Eye Inflammation
Eye; Arteriosclerosis
Eye; Degeneration
Eye; Strained
Head; Pressure In
Neuropathy
Calcarea Fluorica
Calcarea Phosphoricum
Kali Phosphoricum
Arnica Montana
Phosphorus
Solar Plexus Chakra